

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A method of upgrading a multistage scalable switching network, wherein the scalable switching network comprises N stages of switching elements, a plurality of internal ports, a plurality for external ports, and a plurality of internal connections, wherein the internal ports and external ports are coupled to one of the switching elements and the internal connections are coupled to two of the internal ~~connections~~ ports, comprising:

- a) providing a post-reconfiguration architecture comprising N stages of switching elements;
- b) adding new hardware comprising a plurality of internal ports as defined by the post-reconfiguration architecture;
- c) assigning to each internal port a corresponding port defined by the post-reconfiguration architecture;
- d) selecting an open port of the plurality of internal ports that is not coupled to a connection;
- e) breaking a first connection coupled to the corresponding port assigned to the open port, if the corresponding port assigned to the open port is coupled to said first connection[. . .];
- f) connecting the open port to the corresponding port assigned to the open port by coupling a second connection to the open port and to the corresponding port assigned to the open port;

g) repeating steps (d), (e) and (f) until each of the plurality of internal ports is coupled to a connection;

h) selecting a selected port of the plurality of internal ports that is not coupled to the corresponding port assigned to said selected port;

i) breaking a second connection coupled to the selected port;

j) breaking a third connection coupled to the corresponding port assigned to the selected port, if the corresponding port assigned to the selected port is coupled to said third connection;

k) ~~connection~~ connecting the selected port to the corresponding port assigned to the selected port by coupling a fourth connection to the selected port and to the corresponding port assigned to the selected port; and

l) repeating steps (h), (i), (j), (k) until each port of the plurality of internal ports is connected to the corresponding port assigned to each port.

2. (Currently Amended) The method claim 1 wherein said new hardware further comprises a plurality of new external ports and further comprising:

m) activating the plurality of new external ports.

3-18. (Cancelled)

19. (New) The method of claim 1 wherein said new hardware comprises either at least one new stage of switching elements, at least one new switching element or at least one new port to at least one of the switching elements.

20. (New) The method of claim 1 further comprising:

n) selecting a pre-connection port of the plurality of internal ports that is not coupled to any connection and having assigned a corresponding port that is not coupled to any connection;

o) connecting the pre-connection port to the corresponding port assigned to the pre-connection port by coupling a fifth connection to the pre-connection port and to the corresponding port assigned to the pre-connection port; and

p) repeating steps (n) and (o) until there are no ports in the plurality of internal ports that are not coupled to any connections and having assigned a corresponding port that is not coupled to any connection.

21. (New) A method of reconfiguring comprising:

designating a scalable switching network having a plurality of stages of switching elements, a plurality of internal ports, a plurality for external ports, and a plurality of internal connections, wherein the internal ports and external ports are coupled to one of the switching elements and the internal connections are coupled to two of the internal ports;

providing a post-reconfiguration architecture;

adding new hardware comprising a plurality of internal ports as defined by the post-reconfiguration architecture;

deactivating any external ports connected to any hardware not present in the post-reconfiguration architecture;

assigning to each internal port a corresponding port defined by the post-reconfiguration architecture;

rewiring any internal port on the basis of the post-reconfiguration architecture; and

removing any hardware not present in the post-reconfiguration architecture.

22. (New) The method claim 21 wherein said new hardware further comprises a plurality of new external ports and further comprising:

activating the plurality of new external ports.

23. (New) The method of claim 21 wherein said new hardware comprises at least one new stage of switching elements.
24. (New) The method of claim 21 wherein said new hardware comprises at least one new switching element.
25. (New) The method of claim 21 wherein said new hardware comprises at least one new port to at least one of the switching elements.
26. (New) The method of claim 21 wherein any hardware not present in the post-reconfiguration architecture comprises either at least one switching element or at least one new port to at least one of the switching elements.
27. (New) The method of claim 21 further comprising:  
pre-connecting any internal port on the basis of the post-reconfiguration architecture.
28. (New) The method of claim 27 wherein the pre-connecting comprises:  
selecting a pre-connection port of the plurality of internal ports that is not coupled to any connection and having assigned a corresponding port that is not coupled to any connection; and  
connecting the pre-connection port to the corresponding port assigned to the pre-connection port by coupling a first connection to the pre-connection port and to the corresponding port assigned to the pre-connection port;
29. (New) The method of claim 21 wherein the rewiring comprises:  
selecting a selected port of the plurality of internal ports that is not coupled to the corresponding port assigned to said selected port;  
breaking a first connection coupled to the selected port, if the selected port is coupled to a first connection;

breaking a second connection coupled to the corresponding port assigned to the selected port, if the corresponding port assigned to the selected port is coupled to said second connection; and

connecting the selected port to the corresponding port assigned to the selected port by coupling a third connection to the selected port and to the corresponding port assigned to the selected port.

30. (New) The method of claim 21 further comprising:

relabeling any internal on the basis of the post-configuration architecture.

31. (New) The method of claim 30 wherein the relabeling comprises:

selecting a pair of internal ports having a first port and a second port wherein the second port is connected to a switching element containing the corresponding port assigned to the first port or; and

logically exchanging the labels of the first port and the second port whereby traffic intended for the first port is routed to the second port and traffic intended for the second port is routed to the first port.

32. (New) The method of claim 30 wherein the relabeling comprises:

selecting a pair of internal ports having a first port and a second port wherein the second port is connected to the corresponding port assigned to the first port; and

logically exchanging the labels of the first port and the second port whereby traffic intended for the first port is routed to the second port and traffic intended for the second port is routed to the first port.

33. (New) The method of claim 21, wherein the scalable switching network is a redundant blocking compensated cyclic group multi-stage network

34. (New) The method of claim 21, wherein the scalable switching network is a multi-stage interconnection network.

35. (New) The method of claim 21, wherein the scalable switching network comprises a plurality of columns wherein each switching network belongs to one of the plurality of stages and one of the plurality of columns, and wherein internal connections either couple ports in adjacent stages or couple ports in adjacent columns.

36. (New) A method of reconfiguring comprising:

designating a scalable switching network for downgrading having a plurality of stages of switching elements, a plurality of internal ports, a plurality for external ports, and a plurality of internal connections, wherein the internal ports and external ports are coupled to one of the switching elements and the internal connections are coupled to two of the internal ports;

providing a post-reconfiguration architecture;

deactivating any external ports connected to any hardware not present in the post-reconfiguration architecture;

assigning to each internal port a corresponding port defined by the post-reconfiguration architecture;

pre-connecting any internal port on the basis of the post-reconfiguration architecture;

rewiring any internal port on the basis of the post-reconfiguration architecture; and

removing any hardware not present in the post-reconfiguration architecture.

37. (New) The method of claim 36, further comprising:

adding new hardware comprising a plurality of internal ports and a plurality of new external ports as defined by the post-reconfiguration architecture;

activating the plurality of new external ports.